

Harlequin Darter

Etheostoma histrio

Guidelines for Landowners Using Conservation Practices

Missouri Department of
Conservation

Common name ▪ Harlequin Darter
Scientific name ▪ *Etheostoma histrio*
State status ▪ Endangered
Federal status ▪ None

Ecology

In Missouri, the harlequin darter is found in streams and ditches in the lowlands of the southeastern part of the state. This species appears to have a seasonal migratory pattern, moving from larger rivers into tributaries in the warmer months of the year. It prefers areas of current with sandy bottoms where organic debris is present. Aquatic insects, including blackflies, caddisflies and mayflies are the primary food source for this species. Adults are usually 1.5 to 3.0 inches in length. Sexual maturity is reached at one year of age and life expectancy can be up to four years. Spawning occurs in February and March.

Reasons for Decline

The harlequin darter is one of the rarest Missouri darters. Based on historic records, it was never considered common or widespread. However, a few recent observations have been recorded in its former range. Habitat destruction, population fragmentation, and non-point source pollution threaten the harlequin darter throughout its range.

Recommendations

As a migratory species, the harlequin darter requires more than one type of habitat. For this reason, recommendations for habitat protection apply to large rivers and their tributaries. Efforts should be made to ensure our waterways are healthy through protection and/or restoration of habitat for this and other aquatic species.



Photo Credit: Garold W. Sneegas

Avoid constructing stream crossings. If unavoidable, culverts and stream crossings should be constructed with the same bottom elevation as the existing streambed to avoid restricting stream flow and obstructing fish passage. A bridge would be more appropriate than placement of a culvert due to the potential of migration restrictions for this species. Dams should not be constructed in those streams where this species occurs.

Bank stabilization materials should consist only of rock, clean broken concrete or similar materials free of pollutants, silt and extraneous debris including exposed rebar. Erosion and sediment controls should be implemented, maintained and monitored for the duration of a project.

Follow proper sand and gravel removal procedures outlined in the Missouri Instream Sand and Gravel Removal Guidelines prepared by the Missouri Departments of Conservation and Natural Resources. Guidelines include the following: leave a minimum 20-foot buffer zone between the water line and the excavation area, do not mine within 20 feet of streamside vegetation, and do not alter stream channels. In addition, do not remove gravel during the harlequin darter spawning season (February 1 to March 30).

Limit clearing of vegetation, including standing and downed timber, to that which is absolutely necessary for construction purposes. Re-establish and maintain forested riparian corridors at least 100-foot wide along streams used by harlequin darters to reduce erosion and capture nutrient rich runoff.

Exclude livestock with fences to allow the area to naturally re-vegetate. Discourage cattle from using streams and move watering areas into pastures and away from streams.

Refer to Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

Consider the balance between adverse and beneficial practices when determining the overall effect of a conservation practice.

Beneficial Practices

- Limit livestock access to streams.
- Protection and restoration of riparian corridors along streams.
- Nutrient and pest management on adjacent agricultural fields that results in reduced opportunities for contamination of runoff.
- Practices that control erosion and prevent the delivery of sediment to the aquatic system will prove beneficial to this species.

Adverse Practices

- Sand and gravel removal beyond the excess material on adjacent unconsolidated bars.
- Project activities below the high bank of the stream or high water mark of wetlands during the spawning period of February 1 through March 30.
- Constructing dams and other impoundment structures on streams that host the fish.
- Improper erosion and sediment control.
- Culverts, fords, and stream crossings that create a barrier to fish passage or restrict stream flow.
- Unnecessary vehicle and equipment stream crossing.
- Removing or degrading the riparian corridor near springs and along streams
- Unmanaged application of pesticides, animal waste or fertilizers.

Information Contacts

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Policy Coordination Section
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Jefferson City, MO 65102-0180
Telephone: 573-751-4115
<http://www.mdc.mo.gov/nathis/endangered/>

Missouri Department of Natural Resources

Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 800-361-4827 / 573-751-1300
<http://www.dnr.mo.gov/env/index.html>

U.S. Army Corps of Engineers
Regulatory Branch
700 Federal Building
601 E. 12th Street
Kansas City, MO 64106-2896
Telephone: 816-389-3990
<http://www.nwk.usace.army.mil/>

U.S. Environmental Protection Agency
Water, Wetlands, and Pesticides Division
901 North 5th Street
Kansas City, KS 66101
Telephone: 913-551-7003 / 800-223-0425
<http://www.epa.gov/region7/>

U.S. Fish and Wildlife Service
Ecological Services Field Office
101 Park DeVille Dr., Suite A
Columbia, MO 65203
Telephone: 573-234-2132
<http://www.fws.gov/midwest/partners/missouri.html>

Legal

The Missouri Department of Conservation prepared these guidelines for conservation practices with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat.

Compliance with these management guidelines is not required by the Missouri wildlife and forestry law or by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

“State Endangered Status” is determined by the Missouri Conservation Commission under constitutional authority, and specific requirements for impacts to such species are expressed in the Missouri Wildlife Code, rule 3 CSR 10-4.111.